OGC 59-0668

21 April 1959

MEMORANDUM FOR: Security Officer, OSI

25X1 SUBJECT: [redacted] - Publication Clearance

This Office interposes no objection to publication in the Annual Proceedings, 12th National Conference on Administration of Research, of a paper entitled "Administration of Research in the Soviet Union," delivered at the Conference on 12 September 1958. We assume that neither copyright nor payment are involved in the transaction.

[redacted] 25X1
Office of General Counsel

cc: Office of Security

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ANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Security Officer, OSI

DATE: 17 APR 1959

FROM : Chief, Personnel Security Division, OS

25X1 SUBJECT: [redacted] - Publication Clearance

REF: Form 879 dtd 3/4/59 from Subject with attachment

1. The Subject requests security approval to have a speech 25X1
entitled "Administration of Research in the Soviet Union" published. [redacted] The proposed publisher is the Denver Research Institute.

2. This Office interposes no objection from the standpoint of security provided the prior approval of the DD/I and the Office of the General Counsel is obtained.

3. This Office has effected coordination with the Assistant to the Director as required by [redacted] dated 6 January 1956. 25X1

FOR THE DIRECTOR OF SECURITY:

[redacted] 25X1

CONCURRENCE:

25X1 [redacted]

Colonel Stanley J. Grogan
Assistant to the Director

20 April 1959
Date

Enclosures:
cc Form 879
cc Speech

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Approved For Release 2004/05/12 : CIA-RDP62-00631R000300200005-3

24 February 1959

ADMINISTRATION OF RESEARCH IN THE SOVIET UNION

The Soviet Union at the present time, not including the satellites or Communist China, has among its active working force a professionally trained echelon of scientists and engineers which is 15% larger than the corresponding group in the United States. Despite an anticipated increase in the next five years in the annual rate of graduation of scientists and engineers in the United States, it is estimated that by 1963 the Soviet Union will possess a scientific and technical force 30% greater than that of the United States.

The situation is little better if one compares the Communist Bloc, not including Red China, with the United States and Western Europe. By 1963 the Bloc's total scientific and technical manpower will exceed that of the West by at least 25%.

Although it is true that the quality of research accomplished by Soviet scientific personnel has been and is spotty, effective efforts are being made by the Soviets in all fields to improve the quality of their scientific and technical training. It is becoming increasingly difficult to locate weaknesses in a scientific effort which in a relatively few short years has reached parity or even supremacy in some of the areas of research deemed to be of priority interest by the Soviets.

It seems apparent that if this vital, energetic, vigorous and growing Soviet research effort, one which is still far from its peak, is managed with a maximum degree of effectiveness, the West is in for a series of continuous surprises, many of them, probably, of an unpleasant nature.

Subordinate to the Council of Ministers are individuals who, going down through various echelons of administration, are the real supervisors of the Soviet research effort. It would be of interest to examine critically a number of these individuals in an effort to determine such factors as their true scientific ability, training and experience, degrees of party loyalty, and responsibilities and authority. For the purposes of this paper, this is obviously impossible, but this much can be said. Scientists of proven ability make up the great bulk of supervisors at all levels of administration. In the main these supervisors are men of recognized scientific standing, holding advanced degrees in science or engineering. Fanatical or hard-core Communist Party men are in a distinct minority. Financial benefits, prestige and public recognition, devotion to science, loyalty to country, and a strong desire to overtake the United States appear at present to be their strongest motivating forces.

After this brief look at individuals, let us examine the system in which they function. Prior to the summer of 1957, Soviet research was conducted by 3 categories of institutions:

1. The Academy of Sciences system and specialized academies.
2. All-Union and Union-Republic Ministries.
3. Institutions of Higher Education.

Although a number of scientific and technological advances were achieved under this system, the Soviet regime was aware of certain problems which tended to hamper the most effective utilization of its scientific resources and manpower. These problems can be grouped in 5 categories:

1. Compartmentalization - which resulted in duplication of research and tended to serve as a barrier in the exchange of information

among scientists. As a result, no effective exchange existed between the three major divisions.

2. Highly Centralized Administrative Authority - concentrated largely in Moscow, tended to make for much red tape and slow decision-making.

3. Inadequate Scientific-Technical Support to Industry and Agriculture - resulted especially in a lag in application of scientific achievements.

4. Disproportionate Concentration of Research Institutions in Western USSR - was a drawback to the rapid development of industry and exploitation of natural resources in Siberia and the Far East.

5. Inadequate Coordination of Planning and Research Work - which also made for duplication in research effort.

Under the new organizational set-up which was part of the Economic Reorganization of May 1957, administrative control over an estimated 3000 research institutions is exercised by 6 government bodies instead of 3 under the old system. (See Chart 1).

Academy of Sciences System

Foremost among these categories of institutions is the Academy of Sciences of the USSR. The Academy system consists of the Academy of Sciences USSR and 13 Union-Republic Academies. The Academy is the highest scientific body in the Soviet Union with the most eminent scientists as its members, and employs 10-15% of all scientific personnel in the USSR. It performs more than 50% of the Soviet basic research and Academy leadership has indicated a desire to increase its amount of basic research in the future.

Contrary to a general impression, the Academy does not plan and control all research in the USSR. It does control research within its own system, also controls certain priority research in some institutions not in the Academy system. It will have a growing influence in the coordination of fundamental research throughout the USSR.

The Academy operations are controlled by:

1. The General Assembly - It is composed of the entire membership of the Academy (167 academicians, 361 corresponding members and 32 foreign members) and is theoretically the highest governing body in the Academy.

2. The Presidium - However, the real center of power is the Presidium, composed of the President of the Academy, four vice-presidents, the Chief Learned Secretary, the 9 Department Heads, the presidents of four republic academies, and 9 other academy members. This body is the real policy-making organ and has usurped many functions which the General Assembly is supposed to perform.

3. The Scientific Secretariat - Also called the Chief Learned Secretary, is the official party representative within the Academy. The Secretariat is responsible for selection of personnel and completion of research programs.

Dissatisfaction has been voiced by some academicians with regard to the autocratic control exercised by the Presidium. In 1956, during the discussion of the reelection of Nesmeyanov, Academician Tamm criticized the existing administration of Academy affairs by pointing out that the Presidium had assumed an autocratic

role and the General Assembly had become a "rubber stamp." As a result, a forthcoming revision of statute was announced last summer. On the basis of recent statements made by academicians, the new statute will probably provide for the following changes in the Academy:

(a) The General Assembly may acquire a more active role in Academy policy matters.

(b) There will probably be an allocation of more administrative authority to department, institute and laboratory heads, leaving the Presidium to be concerned with long-range problems of the Academy.

Better geographical distribution of Academy institutions and personnel is another major current problem confronting the Academy. (See Chart 2). Of the more than 130 scientific institutes under the Academy of Sciences, about 70% are located in Moscow, Kiev, Leningrad, and Kharkov and employ over 90% of the Academy's personnel. This disproportionate concentration of research facilities and personnel has caused the regime to take measures to correct it. One of these is the formation of a new Siberian Department, created in May of 1957. As part of this Department, two new "scientific cities" are being established near Novosibirsk and Irkutsk. The government announced plans to spend 25 million dollars during 1958 for the construction of the Novosibirsk Center. The Novosibirsk Center (to be completed by 1960) will consist of

(1) 14 research institutes--one, the center of CTR research, and (2) a university to facilitate integration of scientific training and research. The Irkutsk Center will consist of 8 institutes to be completed by 1965. Additional expansion of facilities in Angarsk, Krasnoyorsk, Vladivostok and Yakutsk is also under way.

Ministerial Research

Since the industrial reorganisation, the amount of scientific research conducted by All-Union ministries has been reduced tremendously. More than 25 ministries have been abolished. There are only 4 All-Union industrial ministries remaining which control scientific research. These are:

1. Medium Machine Building (atomic energy)
2. Ministry of Transport Construction
3. Ministry for Construction of Electric Power Stations
4. Ministry of Communications

However, there are two Union-Republic Ministries which play a very important role in scientific research since they have specialized academies under their jurisdiction. The Academy of Medical Sciences is under the Ministry of Health and the Academy of Agricultural Sciences is under the Ministry of Agriculture.

Sovnarkhozes

A third major group of research institutions are those under the newly established Councils of National Economy or Sovnarkhozes, located throughout the Soviet Union. Approximately 700-800 institutions, formerly under industrial ministries, have been or are being transferred to the 104 Councils of National Economy. These institutions perform

the major portion of applied research in the USSR. To aid the Sovnarkhozes, Scientific-Technical Councils are being established, with a membership comprised of scientists, technical experts, party workers, etc. The Councils advise Sovnarkhoz leadership on scientific and technical matters. These Councils are a major attempt on the part of the regime to improve scientific and technical support to industry.

This regional administration of research institutions provides a decentralization of administrative authority over research as compared to highly centralized control of the Chief Directorates under the Ministerial system. Placing industrial research on a regional basis will probably call for an expansion of research institutions under industrial enterprises since the industries of the various regions will probably not be self-sufficient in scientific support.

State Committees

Since December of last year, 5 industrial ministries which are important in defense activity have been replaced by State Committees for:

1. Defense technology
2. Aviation technology
3. Shipbuilding
4. Radio electronics
5. Chemistry

These committees are probably in charge of planning and administering research, and if so, it apparently represents an intention on the part of the government to maintain centralized control over certain defense-connected research areas.

Gosplan - The State Planning Committee

A new development in the administration of scientific research is the expanded role which Gosplan has assumed. Since the industrial reorganization, a number of central institutes have been transferred to its jurisdiction. It is quite likely that these institutes are responsible for coordinating and guiding research in their respective fields throughout the country. Gosplan appears to have a major role in overall planning of research on a nation-wide basis.

VUZ Research

Institutions of Higher Education (more commonly called VUZes) comprise another major category of research institutions in the USSR. Scientific research is conducted in 39 universities and approximately 380 institutions offering technological and scientific training. Since World War II these institutions have been criticized for:

1. Not devoting enough time to research
2. Ignoring the scientific and technical needs of industry and agriculture.

In an attempt to increase the research activity of VUZes and to provide added support to industry and agriculture, the government has plans to:

1. Build 30 problem laboratories in the leading VUZes of the country to work on scientific problems peculiar to a given region.
2. Spend 25-50 million dollars on this program in 1957-58.

The transfer of more administrative authority to institutes under VUZes is the current trend, which will probably result in more

resourcefulness and initiative on lower levels and will leave Chief Directorates more time to study long-term problems.

Planning (See Chart 3)

The basic Soviet method for planning scientific research from the bottom up consists of 3 phases:

1. First, the Presidium of the Central Committee of the Communist Party issues broad directives which define scientific problems of national importance. These directives become more specific as they filter down the administrative channel.

2. Second, on the basis of these directives, institutes and laboratories prepare draft work plans which are forwarded up the administrative pyramid. These work plans get less specific as they go back up the administrative channel.

3. The third stage consists of review by Gosplan and the State Scientific-Technical Committee and confirmation by the Council of Ministers. After the plan is made into law by the Supreme Soviet it is passed down the administrative channels for implementation.

Within the broad national objectives laid down, this mechanism leaves the individual scientist considerable freedom in planning his program within well-defined limits. However, under the new system planning of research is more centralized and Gosplan is taking a more active role in planning research on a national scale than it has in the past. It is obvious that the Soviets hope that such centralized planning will make for less duplication of effort, one of the serious weaknesses of their past research effort. Furthermore, the State Scientific-Technical Committee will probably review research plans

to advise Gosplan concerning the level at which the national economy can be planned, (i.e., how much research the USSR can accomplish in given fields). This review should help close the gap between discovery and application.

Control and the Party

Although planning is itself a means of maintaining control over research activities, the Party exercises additional control through its units which exist at all administrative levels of scientific institutions. Although we know very little about the role the Party units play in planning research, there have been recent statements in the press to the effect that the local party organizations should support the scientists and not interfere in planning and administration in scientific institutions. Thus, the local party units may exercise control over research primarily by reporting to higher party organs on efficiency of institutions and by reporting progress plan fulfillment.

Coordination (See Chart 4)

Under the old system there was very little central coordination of research among the institutes of the Academy, ministries, and institutions of higher education except in a number of high priority areas. Under the new system a number of organizations have been assigned specific coordination responsibilities.

1. The State Scientific-Technical Committee coordinates:

   a. Activities of scientific-technical information organs throughout the country.

   b. Activities related to application of basic scientific advances (close the lead-time gap).

2. Scientific-Technical Council of Ministry of Higher Education coordinates activities of VUZ institutes with the ministries, Sovnarkhozes and Academies.

3. Gosplan - With the advice of its Technical Economic Council, Gosplan is responsible for coordination of scientific planning on a nationwide basis. The Council apparently will be in close contact with the Scientific-Technical Councils of the Sovnarkhozes.

If these coordination organs are effective in coordinating research and planning across barriers, the end result should be greater efficiency in the utilization of research facilities and personnel.

Summary and Conclusions

The reorganization has not yet been completed but the measures which have been taken so far indicate that the Soviet regime is aware of the problems it faces in organizing research and is taking constructive measures which will probably result in the following developments:

1. Opportunities still exist for much compartmentalization among the various categories of research institutions; however, the measures which have been taken to break across these barriers appear to be constructive means of coping with this problem and may well facilitate a better integration of research on a nationwide scale.

2. The trend toward a decentralization of administrative authority in research institutions also holds promise of cutting much red tape, and generally increasing the initiative and resourcefulness of administrators on the lower levels while permitting personnel on higher echelons to devote themselves to long-term policy matters. This development could well work

toward a better overall formulation of research programs and more rapid progress in research work.

3. The increased centralization in planning should improve the Soviet orientation of scientific and technical research toward priority military and economic areas as well as reduce the amount of duplication in research effort.

4. Increased scientific and technical support will probably be available to industry as a result of:

a. A better geographical distribution of scientific and technical personnel.

b. The creation of advisory councils composed of scientists and technical experts on the Sovnarkhoz level.

5. The current trend toward an increase in the number and quality of research institutions and a better geogrphical distribution of research facilities and scientific personnel should augment overall Soviet research potential significantly.

This very brief coverage of the Soviet mechanism for administering its research program has presented some of the past difficulties which the Soviets have encountered in handling such a program, and a summary of their current attempts to overcome them. It is significant that they can recognize their ailments and the fact that they can make such sweeping changes in an effort to overcome them is suggestive of considerable potential to improve further their system. Their considerable ability to render harsh self-criticism and their intense efforts to overcome any faults revealed are indicative of this potential. On the other hand, their research administration appears overburdened with bureaucrats and in comparison with our system is overplanned.

Except in very high priority areas, their extensive use of committees suggests an unwillingness and perhaps a fear of making individual decisions. We find weaknesses in many instances in the decision-making process involved in the jump from laboratory research, representing an inexpensive process, comparatively, to the high costs involved in creating production-sized units. Nevertheless, it is clear that the Soviets possess a vigorous, creative, growing scientific and technical effort, which will be rather ruthlessly but fairly efficiently managed, and which will certainly challenge the West for supremacy in most areas of science and technology.

THE ORGANIZATION OF SOVIET SCIENTIFIC RESEARCH

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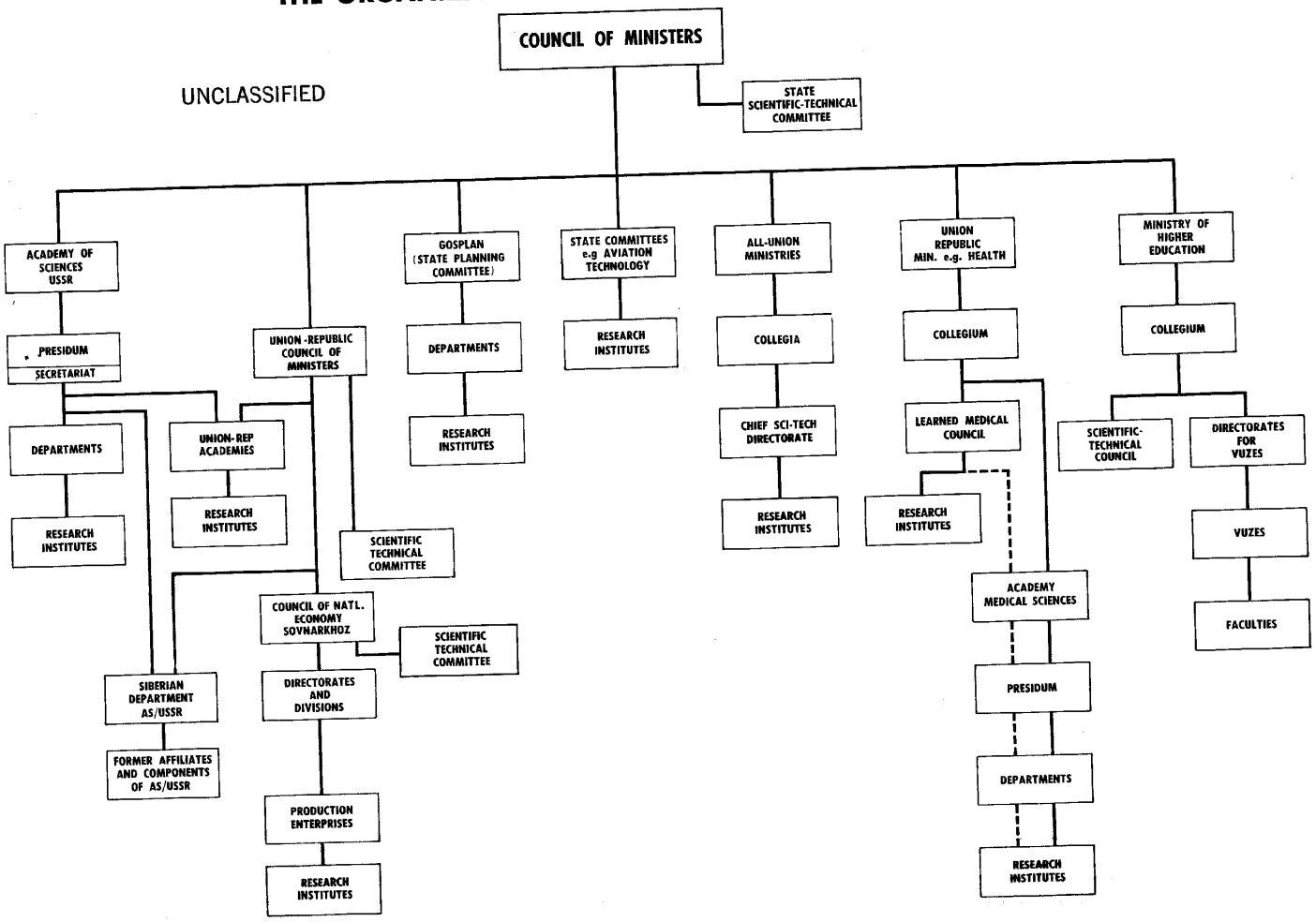

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CHART I

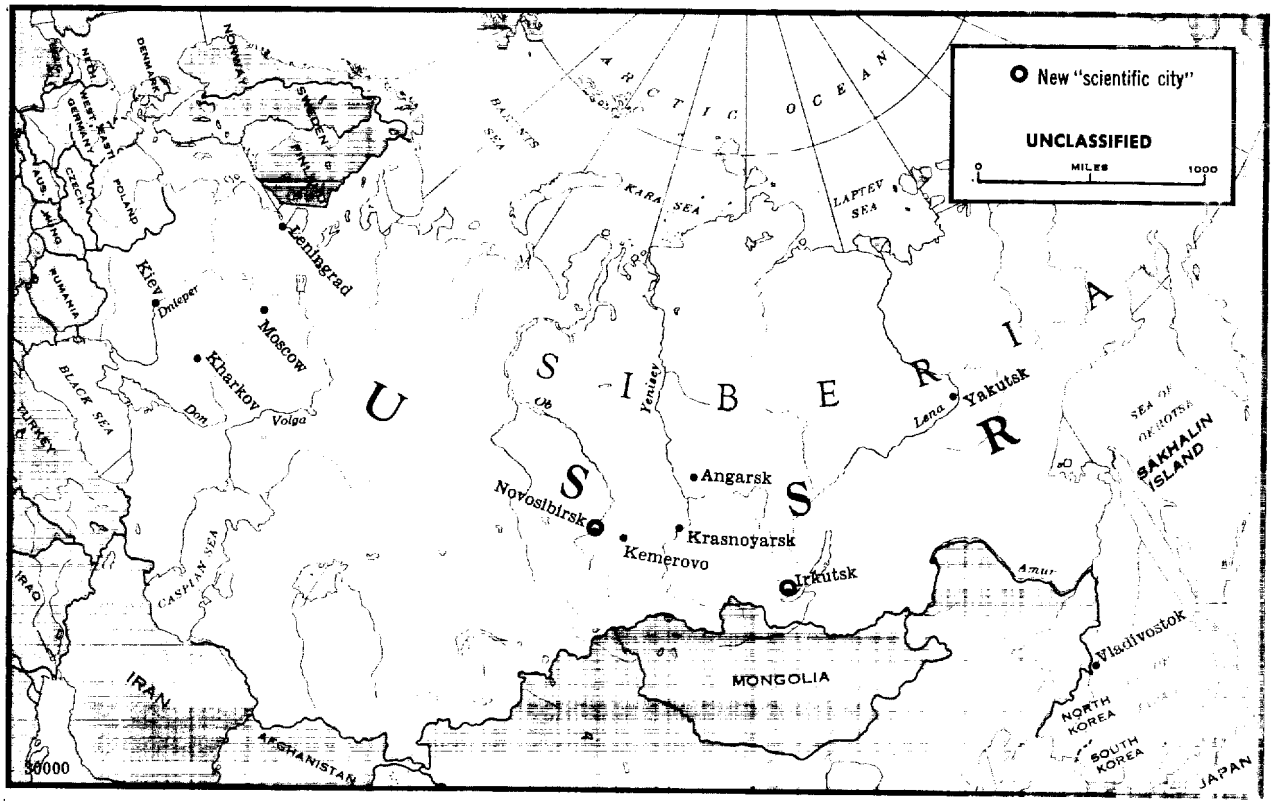
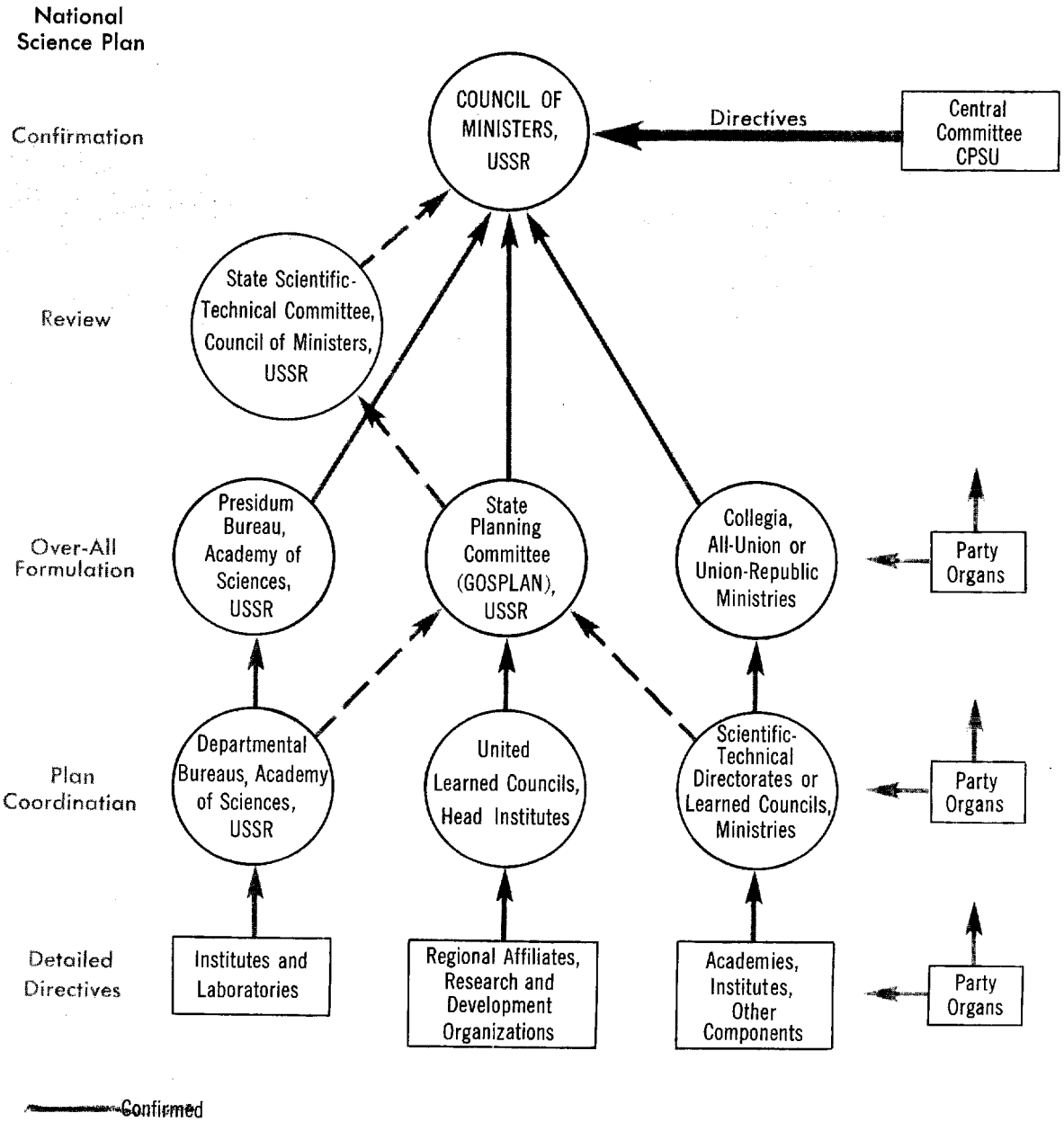


CHART 2.

~~FOR OFFICIAL USE ONLY~~

USSR: Proposed Channels for Planning Scientific Research

1 August 1957



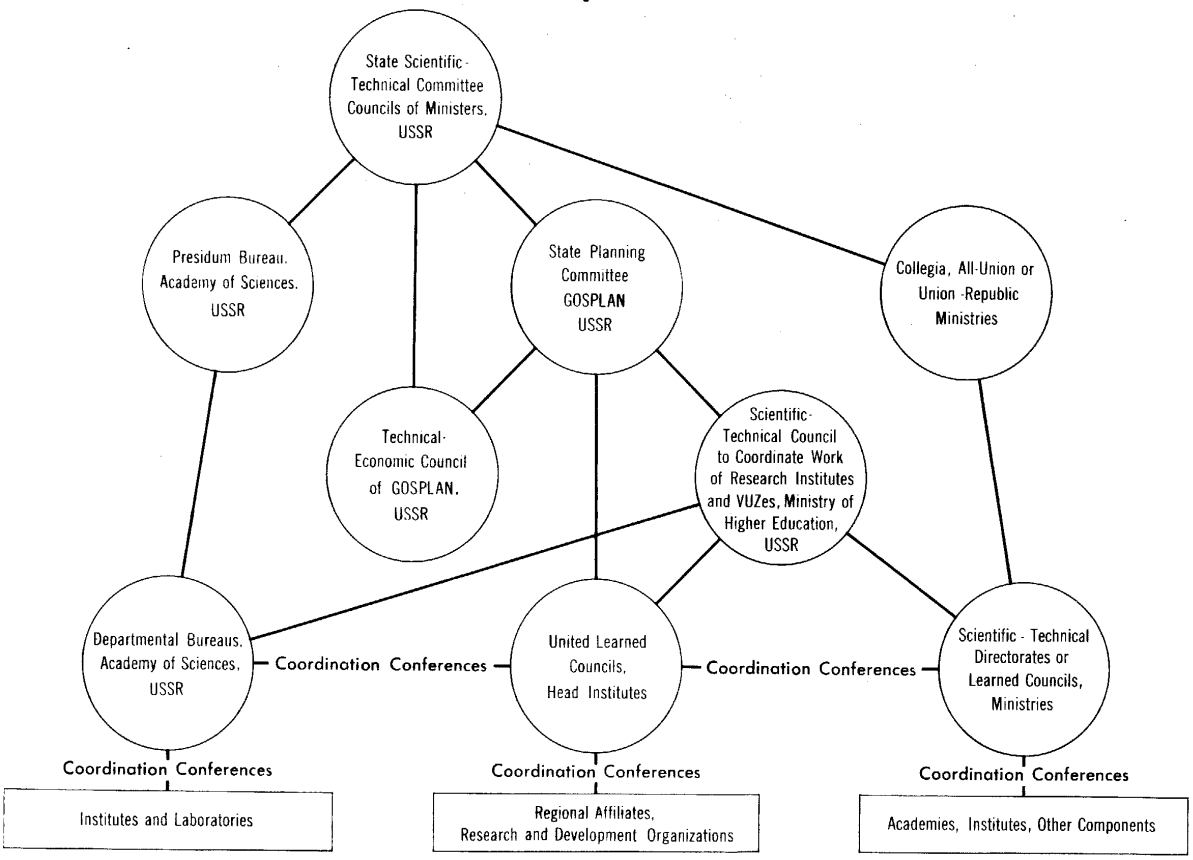
~~Figure 2~~

CHART 3

~~FOR OFFICIAL USE ONLY~~

USSR: Proposed Channels for Coordination of Scientific Research at the National Level

1 August 1957



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~~Figure 3~~

CHART 4